AWIPS SYSTEM MODIFICATION NOTE 22, REVISION A (for Electronics Technicians)
Maintenance, Logistics, and Acquisition Division
W/OPS12: JCS

SUBJECT:	X-Terminal (XT) Installation Procedures
PURPOSE:	To provide installation instructions on replacing old XTs with newer ones.
EQUIPMENT AFFECTED:	Old Hewlett Packard (HP) XTs and monitors.
PARTS REQUIRED:	The Dell Precision 360s and LCD monitors will be drop shipped from Dell. Northrop Grumman will provide a LAN cable, Monitor and Control (M&C) cable, device labels (to apply to the XT base and monitor), and install CDs for each XT. In addition, certain sites (RFCs and sites with more than 6 workstations) will also receive a second MRV (formerly known as Xyplex) M&C Interface cable.
SPECIAL TOOLS REQUIRED:	Standard site toolkit.
MODIFICATION PROCUREMENT:	None.
EFFECTIVITY:	All AWIPS WFOs, RFCs, and regional headquarters with XT workstations must perform this modification.
ESTIMATED TIME REQUIRED:	2-3 hours for the first XT, 30-40 minutes for each subsequent XT.
EFFECT ON OTHER INSTRUCTIONS:	None. File this note in EHB-13, section 5.1.
AUTHORIZATION:	The authority for this modification note is Request for Change AC403.
VERIFICATION STATEMENT:	This procedure was tested and verified on the NHDA platform at Silver Spring, MD (SLVM2).

GENERAL:

NOTE: Read through this entire document at least once to get familiarized with the procedures before performing the modification.

All sites **must** have OB4 installed prior to XT installations.

Instructions for the disposal of old XTs are similar to the disposal of old HP workstations (WSs), and can be found in Information Note 17B located at:
http://www.ops1.nws.noaa.gov/awipsnew/software/InfoNote17RevB(HPXT-disposal)_S.pdf

PROCEDURE:

The following sections present the procedures for installing and activating the new XTs. Sections A and B are accomplished in preparation for the installation. Sections C (Image Installation), D (XT Configuration), and E (XT Activation) are accomplished once for each XT. The procedures in sections C and D may be performed in advance for all XTs, or the procedures in sections C, D, and E may be performed sequentially for each XT. Section F, Final SSH Configuration, must not be performed until all new XTs are installed and activated.

A. Prepare Site for XT Upgrade

Configure Xyplex

1. Important Note for Sites: ACR, AFC, ALR, FWR, HFO, KRF, MSR, NHDR, NHDW, NHOR, NMTR, NTCA, NTCC, NTCD, ORN, PTR, RHA, RSA, SPCW, STR, TAR, TBDR TIR, TUA, WNOR, and WNOW. These sites will receive a second M&C interface as part of the XT replacement. This device is being provided due to a shortage of M&C ports at the site and/or to standardize RFC M&C port assignments. The second M&C must be installed and certain cables relocated prior to installing the new XT M&C cables. New labels are being provided for the relocated M&C cables. Use only the labels that are applicable to your site and discard any extras. The new M&C interface was configured prior to delivery. Sites listed in this step, follow the instructions in Attachment B.
2. ALL SITES: Contact the Network Control Facility (NCF) (301-713-9344) and have the appropriate Xyplex ports configured in preparation for the XT upgrade.

Lay Cables

1. Extend the new Linux XT Cat5e cables from the designated High-Speed LAN switch ports in Rack 5 to the current XT positions in the operations area.
2. Extend the new M&C cables from the designated Xyplex ports in Rack 3 to the current XT positions in the operations area.

Prepare a Configuration Area for Loading the Linux XT

1. Extend a temporary (Cat5) LAN connection from the AWIPS to a workspace suitable for loading a workstation. This step is not mandatory but is the preferred method for configuring the new XTs.
2. Use this area to unpack and set-up each Dell Precision 360 with LCD, keyboard and mouse and perform the procedures in sections C and D. Connect the LCD to port 1 on the Y video cable.

NOTE:	The LCD monitor and its base are shipped unattached and will need to be assembled. The digital cables shipped with each LCD are not used for this installation.

B. Backup LX1 for Restore of New XTs

NOTE: Although sites can use any **baseline** LX to perform the backup, using LX1 is highly recommended and the following procedures assume LX1 as the workstation performing the backup.

Sites will not be able to access px2data on LX1 for a short period of time during the backup since the script unmounts/mounts px2data. Also, sites cannot export a D2D or use AWIPS software from LX1 during the backup. The following error message displays if an attempt at accessing px2data is unsuccessful:

**********WARNING PX2DATA IS NOT MOUNTED **********

1. Log into LX1 as `root`. Open a terminal window and type:

   `mkdir -p /local/install`
   `script -a -f /local/install/Backup_LinuxXT.out`
   `ssh px2` (as `root`)
   `exportfs -i -o rw,no_root_squash lx1:/px2data`
   `exit`

2. Insert the **X-Term Replacement – Full Deployment** CD into the LX1 CD-ROM and type:

   `mount /mnt/cdrom` (Close the CD-ROM GUI that appears.)

NOTE: Close the GUI windows prior to unmounting the CD; otherwise the unmount will fail. This script should take approximately 10 minutes to run. Ignore any errors concerning `/awips/ifps`.

`cd /mnt/cdrom`
`./Backup_XT.sh`
`cd /px2data/XT_SAVED`
`tar tvfzP SAVED_XT.tar.gz`
`cd /`
`ssh px2` (as `root`)
`exportfs -u lx1:/px2data`
`exit`

3. Copy the system script to DS1 by typing:

NOTE:	In the script below, `final.sh` will be placed in `/tmp` on DS1 and `setupSSH_XT` in `/local/install` on PX2.

```
cd /mnt/cdrom
ftp ds1    (as root)
cd /tmp
put final.sh
chmod 555 final.sh
quit
ftp px2    (as root)
cd /local/install
put setupSSH_XT.sh
chmod 555 setupSSH_XT.sh
quit
cd /
eject cdrom
exit
```

4. Remove the CD from the carrier and close the CD drive.
5. Log out of LX1.

C. Install the XT Image on the Dell Precision 360

The following steps must be accomplished on each Linux XT prior to introducing it to the AWIPS LAN.

1. Power-up the LCD display and wait a few seconds.
2. Power-up the CPU. When the ***Dell*** logo appears, press the **F2** key to interrupt the boot process and to enter ***System Setup***.
3. Select ***Boot Sequence*** and press **Enter**.
4. Ensure that the boot device sequence is as follows:

   1) Diskette Drive
   2) IDE CD-ROM Device
   3) Hard-Disk Drive C:

5. Insert the bootable **Linux X-Term Replacement - Workstation** CD (#1 of 3) into the CD drive. (All three CDs are required to make the image complete.)
6. Press the **Escape** key twice to exit, and then press **Enter** to ***Save Changes and Exit***. Boot the XT.
   a. Type **ghostond** at the `A:\>` prompt when the machine responds with `Bad`

`command or file name`. The user is prompted for permission to mark the drive as usable by ghost.

b. Select **OK**. The Ghost program starts restoring the disk, and prompts the user to insert CDs 2 and 3. (This process takes about 5 minutes per CD, 15-20 minutes total.)

c. When the Ghost program completes, the user is prompted with:

```
Bad command or file name
A:\>
```

NOTE:	Ensure that the *Linux XT Replacement - Workstation* CD #3 remains in the CD-ROM before rebooting in the next step.

7. Reboot the XT by pressing the **Ctrl/Alt/Delete** keys.

NOTE:	If LILO fails to boot, **call the NCF.** Ignore any process *FAILED* output during the booting process.

8. Configure LILO, reset the root password, and disable ***CD Automount*** by performing the following:
   a. Log in as `root` (password `root`)
   b. Enter the following commands in the terminal window:
      `passwd` (change password to the current site root password)
      `lilo -v`
   c. From the *System* Menu, select Programs → Setting → Peripherals → CD Properties.
   d. Uncheck Automatically start auto-run program on newly mounted CD.
   e. Uncheck Automatically mount CD when Inserted.
   f. Click **Apply**, then select **OK**.
   g. Log out.
9. Remove the Ghost CD #3 from the CDROM drive and reboot the XT.

D. Configure the New XTs

This step can be completed for all new XTs in advance **but care must be taken** to ensure that **only one device** is connected to the LAN at a time, as they will all have the same temporary IP address and device name. If a LAN connection is not available in the configuration/staging area, physically replace the current HP XT with the new Linux XT by completing steps 1 through 6 of section E before proceeding.

To run this part of the install, the site needs to gather three values to input into `ConfigureLX.sh`:

1) Site ID

This is used to set the Linux hostname and should be entered in lowercase.
Example: If the DS1 hostname is `ds1-orn`, then the site ID is `orn`.

2) IP address of DS1

To obtain this address, type **`nslookup ds1-<siteid>`** on any workstation. This address should be of the form 165.92.*xy*.5 or 165.92.*xy*.135, where *xy* is a site-specific value.

Example (where the site ID is `orn`): `nslookup ds1-orn`

3) IP address of the default gateway

To obtain this address, type **`nslookup router-<siteid>`** on any workstation. This address should be of the form 165.92.*xy*.70 or 165.92.*xy*.200, where *xy* is a site-specific value.

1. Plug in the Cat5 cable that was run previously to this location into the appropriate receptacle on the CPU.

NOTE:	The CD does not display on the desktop after insertion.

2. Insert the **X-Term Replacement – Full Deployment** CD into the CD-ROM drive.
3. Login as `root` and execute the following:

```
mkdir /local/install
script -a -f /local/install/ConfigureStage_XT.out
mount /mnt/cdrom        (Close any GUI windows that appear)
cd /mnt/cdrom
./ConfigureXT.sh staging
```

4. The script prompts for the values previously mentioned (site ID, DS and gateway IP addresses). Enter the values as the script asks for them. The values just entered are displayed in the window along with values for other parameters.
5. Verify that the values are correct and enter **`y`** in response to the prompt.

```
exit
```

6. Perform the following steps to safely reboot the XT (assuming a Gnome session is running):
   a. On the LCD monitor, click the **Big Foot** icon on the Gnome panel and select **Log out**. The user's Gnome session exits and the Gnome login appears.
   b. Click the **System** menu and select **Reboot**.

NOTE:	At this point, the output is directed to the serial port (to Xyplex) causing a blank display for 1-2 minutes.

7. Upon reboot, log into `xttemp-<site_id>` as `root` and execute the following commands:

   `mount /mnt/cdrom`
   `script -a -f /local/install/Restore_XT.out`
   `cd /mnt/cdrom`
   `./Restore_XT.sh` (Ignore any printing errors.)

NOTE:	If a baseline LX **other than** LX1 is used for performing the backup, rename the `/awips/fxa/.environs.lx1-xxx` file to `/awips/fxa/.environs.lx#-xxx`, where `lx#` is the LX used for performing the backup and *xxx* is the site ID.

   `exit`

   `script -a -f /local/install/postinstall_XT.out`
   `cd /mnt/cdrom`
   `./postinstall_XT.sh` (Ignore any printing errors.)

NOTE:	If the script loops the same line over for more than 15 minutes and not the entire configurations menu, or if the first 5 lines of the output file makes note of missing `.environs` or AWIPS `.sh` profiles, call the NCF.

   `exit`

8. Log out of XTTEMP and log back in as a valid site user.

NOTE:	Each valid site user **must** disable CD automount after the initial login.

9. Click on the desktop to obtain the menu to start *Text* workstation, and load a product to verify its functionality. Although the workstation is not fully functional at this point, the product load is sufficient to proceed to the next step.
10. Unmount the CD by typing:

    `umount /mnt/cdrom`

11. Remove the CD from the CD-ROM drive.
12. Log out of XTTEMP.

Proceed to section E, step 7 if a staging/configuration area was not used.

E. Activate new Linux XT

The new XT should now replace the existing HP XT (if not already accomplished).

1. Plug in the new M&C cables into the WFO Xyplex.
2. Power off the existing HP XT and disconnect power and the LAN cable from this hardware.
3. Remove the HP XT hardware from the Operations Area.
4. Relocate the new Dell XT from the staging area to a space vacated by the de-installed HP XT and reconnect the LCD, keyboard, and mouse.
5. Plug the power cord from each new Linux XT component into the receptacle vacated by the HP components removed earlier.
6. Plug in the new Linux XT Cat5e cable that was run previously to this location into the LAN connection on the CPU.
7. Plug in the new Linux XT M&C cable that was run previously to this location into serial port 1 on the CPU.

NOTE: **Go back and complete section D if a staging/configuration area was not used.**

8. Plug in the other end of the Linux XT Cat5e cable into the LAN switch.
9. Power on the XT and insert the **X-Term Replacement – Full Deployment** *CD* into the CD-ROM.
10. Log into **XTTEMP** as `root` and execute the following:

    ```
    mount -a -t nfs
    df /home
    mount /mnt/cdrom        (Close any GUI windows that appear.)
    script -a -f /local/install/ConfigureActivate_XT.out
    cd /mnt/cdrom
    ./ConfigureXT.sh activate
    ```

    The script prompts for the number of the HP XTs being replaced (i.e., for XT1, enter **1**).

    The value just entered displays in the window along with some values for other parameters. Verify that the values are correct. Select **y** in response to the prompt.

    ```
    exit
    ```

11. At the `root` user prompt, type **reboot**.
12. Log into **xt*n*-<*site-id*>** as user **root** and execute the following:

    ```
    mount /mnt/cdrom
    script -a -f /local/install/postinstall_XT.out
    cd /mnt/cdrom
    ./postinstall_XT.sh     (Ignore any printing errors)
    exit
    ```

13. Unmount the CD by typing:

    umount /mnt/cdrom

14. Remove the CD from the CD-ROM drive.

15. Log into a workstation as **root** (if not already logged in) and run system script on DS1 (announce new XT):

    ssh ds1 -<*site_id*> (as root)
    script -a /home/ncfuser/final.out
    cd /tmp
    ./final.sh <*xtn*> (Where **<*xtn*>** is the number of the Linux XT being added, e.g., .xt1...xt2...*xtn*.)

NOTE:	Ignore any errors concerning the /awips/fxa/ldad directory structure on the AX.

    exit

16. Log out and log back in as a valid site user.

17. Click on the desktop to obtain the menu to start *Text* workstation, and load a product to verify its functionality.

18. Remove the old HP XT cables from the high-speed LAN switch.

19. Apply the appropriate device labels provided with the Field Modification Kit (FMK) to the new Linux XT CPU and LCD.

This Linux XT is now completely operational and the previous steps (starting with section C) can be accomplished on each successive XT.

F. Final SSH Configuration

NOTE:	This script should **not** be executed until all new Linux XTs have been installed and fully configured. This script takes approximately 1 minute per user. This script updates all SSH keys and allows all nodes to access the new XTs by way of SSH.

1. Log into PX2 as user **root** and execute the following:

   cd /local/install
   script -a -f /local/install/setupSSH_XT.out
   ./setupSSH_XT.sh
   exit

2. To verify all individual user accounts were updated, type the following:

   grep Updating setupSSH_XT.out

REPORTING INSTRUCTIONS

Report the completed software installation using the Engineering Management Reporting System (EMRS) according to the instructions in NWS Instruction 30-2104, Maintenance Documentation, Part 4, and Appendix F. Include the following information on the EMRS report:

Block #	Block Type	Information
5	Description	Install Dell Linux X-Terminal (XT) workstations
7	Equipment Code	AWIPS
8	Serial Number	001
15	Comments	Installed Dell Linux XT workstations I.A.W. AWIPS Modification Note 22, Revision A.
17a	Mod. No.	22A

A sample EMRS report is provided as attachment A.

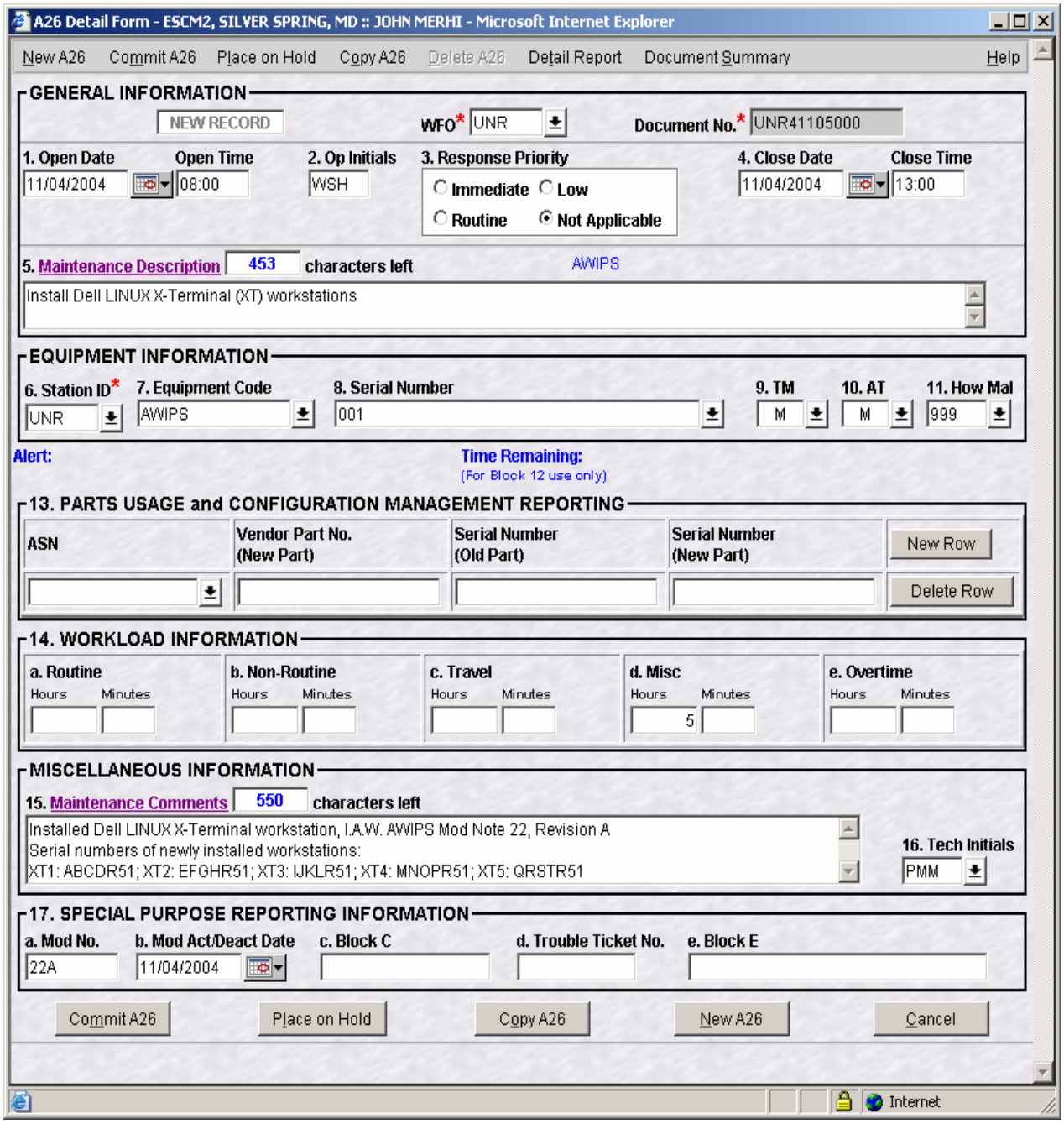
? Mark S. Paese
Signature Not Verified

Digitally signed by Mark S. Paese
DN: cn=Mark S. Paese, o=DOC/NOAA/NWS, c=US
Date: 2004.11.08 17:01:04 -05'00'

Mark S. Paese
Director, Maintenance, Logistics, and Acquisition Division

Attachment A – Sample EMRS Report
Attachment B – Monitor and Control 2 (M&C 2) Installation Procedures
Attachment C – Cable Relocation Procedures for 13 RFCs
Attachment D – Cable Relocation Procedures for AFC-NHDW-HFO-NTCD
Attachment E – Cable Relocation Procedures for NTCA-NTCC
Attachment F – Cable Relocation Procedures for SPCW
Attachment G – Cable Relocation Procedures for NHOR
Attachment H – Cable Relocation Procedures for WNOW
Attachment I – Cable Relocation Procedures for WNOR
Attachment J – Cable Relocation Procedures for NMTR/NHDR/TBDR

Attachment A - Sample EMRS Report



Attachment B - Monitor and Control 2 (M&C 2) Installation Procedures

A number of sites will receive a second M&C interface (referred to as M&C 2 hereafter) as part of the XT replacement due to a shortage of M&C ports at these sites and/or to standardize RFC M&C port assignments. The second M&C must be installed and certain cables relocated prior to installing the new XT M&C cables.

NOTE:	The name displayed on the front panel of the second M&C interface shipped to the sites is "MRV" instead of "Xyplex." MRV communications acquired NBASE-Xyplex and has relabeled the MAXServer's front panel identifying it as part of MRV's In-Reach product family. In all other respects, including model and part number, this device is the same as the currently installed M&C interface.

This attachment addresses the physical installation and checkout of the second M&C. Subsequent attachments address the cable relocation required.

1. Remove the new M&C 2 from its shipping container and attach the rack-mounting brackets with hardware provided.

2. Install M&C 2 just below M&C 1 in Rack 3 (AS1). Sites with D-series application servers, follow steps **2a** through **2c**. Sites with K-series application servers, follow steps **2d** through **2e**:

   Sites with D-series Application Servers:

   a. Remove the 7-inch blank panel directly beneath M&C 1 in Rack 3 (AS1).

   b. Install M&C 2 just below M&C 1. It may be necessary to move the Modem Distribution Panel (MDP) mounting bracket 1 unit lower in the rack in order to accommodate M&C 2.

   c. Fill the gap below M&C 2 by installing the 3.5- and 1.75-inch blank panels (included in FMK) using the rack screws provided.

   Sites with K-series Application Servers:

   d. Remove the 1.75-inch blank panel that is directly beneath M&C 1 in Rack 3 (AS1). If there isn't a 1.75-inch space between M&C 1 and the top of the MDP mounting bracket, it will be necessary to move the MDP mounting bracket 1 unit lower in the rack in order to accommodate M&C 2.

   e. Install M&C 2 just below M&C 1.

3. Run cable NWS5262 (LA1AW122) and connect from PHUBDS (Rack 5 – DS1) Port 4 to M&C 2 Port 10BaseT.

4. Move the console cable from port 40 of M&C 1 to port 40 of M&C 2.

5. Connect the power cord to the third receptacle from the top on the right side power strip. The device performs a self-test and loads its configuration parameters from the flash card.

6. When the device has completed its load process (signified by a steadily blinking *RUN* LED, a solid *LAN* LED, and unblinking *CON* LED), press **Enter** on the Xyplex Console. A *Welcome to AWIPS* banner and a *Login* prompt should appear. Type **AWIPS** at the login prompt and verify that the AWIPS main menu appears.

7. Move the console cable back to M&C 1 port 40 and press **Enter** twice on the Xyplex console to return to the previous menu.

8. Refer to table B-1 to locate the appropriate attachment for the corresponding site and begin the cable relocation procedure.

Table B-1

Site	Relocate Cables per Attachment
ACR, ALR, FWR, KRF, MSR, ORN, PTR, RHA, RSA, STR, TAR, TIR, TUA	C
AFC, HFO, NHDW, NTCD	D
NTCA, NTCC	E
SPCW	F
NHOR	G
WNOW	H
WNOR	I
NHDR, NMTR, TBDR	J

Attachment C - Cable Relocation Procedure for 13 RFCs

Move the following RFC-specific M&C cables from RFC M&C 1 (Xyplex) to the newly installed RFC M&C 2 (this procedure may take up to 2 hours):

1. Disconnect WAN Probe 1 M&C cable (wire number LA1CW92) from RFC M&C 1 port 7 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 5.

2. Disconnect WAN Probe 2 (if applicable) M&C cable (wire number LA1CW100) from RFC M&C 1 port 4 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 6.

3. Disconnect TIU 2 M&C cable (wire number LA1CW31) from RFC M&C 1 port 16 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 16.

4. Disconnect TIU 3 M&C cable (wire number LA1CW32) from RFC M&C 1 port 17 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 17.

5. Disconnect TIU 4 M&C cable (wire number LA1CW33) from RFC M&C 1 port 18 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 18.

6. Disconnect Workstation 7 M&C cable (wire number LA1CW4-7) from RFC M&C 1 port 26 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 20.

7. Disconnect Workstation 8 (if applicable) M&C cable (wire number LA1CW4-8) from RFC M&C 1 port 27 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 21.

8. Disconnect Workstation 9 (if applicable) M&C cable (wire number LA1CW4-9) from RFC M&C 1 port 28 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 22.

9. Disconnect Workstation A (10) (if applicable) M&C cable (wire number LA1CW4-10) from RFC M&C 1 port 29 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 23.

10. Disconnect Workstation B (11) (if applicable) M&C cable (wire number LA1CW4-11) from RFC M&C 1 port 3 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to RFC M&C 2 port 24.

Move RFC device M&C cables from WFOC (collocated) M&C to RFC M&C:

NOTE:	A total of eight cables will be moved from the WFO M&C to the RFC M&C (three to M&C 1 and five to M&C 2). All eight can be moved at one time or they can be moved one at a time as described in the following steps.

1. Disconnect AX M&C cable (wire number LA1CW123) from WFO M&C port 32 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to the RFC M&C 1 port 7.

2. Disconnect PX1 M&C cable (wire number LA1CW118) from WFO M&C port 28 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to the RFC M&C 1 port 3.

3. Disconnect PX2 M&C cable (wire number LA1CW119) from WFO M&C port 29 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to the RFC M&C 1 port 4.

4. Disconnect GSW 1 M&C cable (wire number LA1CW182) from WFO M&C port 12 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to the RFC M&C 2 port 10.

5. Disconnect GSW 2 M&C cable (wire number LA1CW183) from WFO M&C port 13 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to the RFC M&C 2 port 11.

6. Disconnect RP 1 M&C cable (wire number LA1CW180) from WFO M&C port 14 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to the RFC M&C 2 port 8.

7. Disconnect RP 2 M&C cable (wire number LA1CW181) from WFO M&C port 15 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to the RFC M&C 2 port 9

8. Disconnect RP NAS M&C cable (wire number LA1CW184) from WFO M&C port 16 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to the RFC M&C 2 port 12.

RFC Xyplex Port Assignments

Xyplex1 Port #	Current RFC Port Assignments	Post-XT Upgrade RFC Port Assignments	Description
1	AS1	AS1	
2	AS2	AS2	
3	WS11	PX1	PXs currently on collocated WFO Xyplex
4	WS12	PX2	
5	DS1	DS1	
6	DS2	DS2	
7	WP1	AX	AX currently on collocated WFO Xyplex
8	LSW1	LSW1	
9	LSW2	LSW2	
10	HSW1	HSW1	
11	HSW2	HSW2	
12			
13	RTR1	RTR1	
14	RTR2	RTR2	
15	TIU-1	TIU-1	
16	TIU-2	XT1	
17	TIU-3	XT2	
18	TIU-4	XT3	
19	VIR	VIR	
20	WS1	WS1	LX workstation
21	WS2	WS2	
22	WS3	WS3	
23	WS4	WS4	
24	WS5	WS5	
25	WS6	WS6	
26	WS7	XT4	
27	WS8	XT5	
28	WS9	XT6	
29	WS10		
30	DEMOD1	DEMOD1	
31	DEMOD2	DEMOD2	
32	DEMOD3	DEMOD3	
33	SBP1	SBP1	
34	SBP2	SBP2	
35	DEMOD4	DEMOD4	
36	CP1	CP1	
37	CP2	CP2	
38	FIREWALL	FIREWALL	
39	DIAL MODEM	DIAL MODEM	
40	CONSOLE	CONSOLE	

Xyplex2 Port #	Current RFC Port Assignments	Post-XT Upgrade RFC Port Assignments	Description
1			
2			
3			
4			
5		WP1	WAN Probe
6		WP2	WAN Probe
7			
8		RP1	REP
9		RP2	REP
10		GSW1	REP
11		GSW2	REP
12		RP NAS	REP
13			
14			
15			
16		TIU-2	
17		TIU-3	
18		TIU-4	
19			
20		WS7	
21		WS8	
22		WS9	
23		WS10	
24		WS11	
25			
26			
27			
28			
29			
30		XT7	
31		XT8	
32		XT9	
33		XT10	
34		XT11	
35			
36			
37			
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Attachment D - Cable Relocation Procedure for AFC-NHDW-HFO-NTCD

Move the following M&C cables from M&C 1 to M&C 2:

1. Disconnect Workstation 7 M&C cable (wire number LA1CW4-7) from M&C 1 port 26 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 20.

2. Disconnect Workstation 8 M&C cable (wire number LA1CW4-8) from M&C 1 port 27 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 21.

3. Disconnect Workstation 9 (if applicable) M&C cable (wire number LA1CW4-9) from M&C 1 port 28 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 22.

4. Disconnect Workstation A (10) (if applicable) M&C cable (wire number LA1CW4-10) from M&C 1 port 29 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 23.

Attachment E - Cable Relocation Procedure for NTCA-NTCC

Move RFC device M&C cables from WFOC M&C to RFC M&C:

NOTE:	A total of three cables will be moved from the WFO M&C to the RFC M&C. All three can be moved at one time or they can be moved one at a time as described in the following steps.

1. Disconnect AX M&C cable (wire number LA1CW123) from WFO M&C port 32 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 1 port 7.

2. Disconnect PX1 M&C cable (wire number LA1CW118) from WFO M&C port 28 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 1 port 3.

3. Disconnect PX2 M&C cable (wire number LA1CW119) from WFO M&C port 29 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 1 port 4.

Attachment F - Cable Relocation Procedure for SPCW

Move firewall and workstation M&C cables as directed in the following steps:

1. Disconnect Workstation 7 M&C cable (wire number LA1CW4-7) from M&C 1 port 26 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 20.

2. Disconnect FW1 (Firewall 1) M&C cable (wire number LA1CW98) from M&C 1 port 13 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 1 port 38.

3. Disconnect FW2 (Firewall 2) M&C cable (wire number LA1CW99) from M&C 1 port 14 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 1 port 29.

Attachment G - Cable Relocation Procedure for NHOR

Move M&C cables from M&C 1 to M&C 2:

1. Disconnect Workstation 7 M&C cable (wire number LA1CW4-7) from M&C 1 port 26 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 20.

2. Disconnect GSW 1 M&C cable (wire number LA1CW182) from M&C 1 port 3 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 10.

3. Disconnect GSW 2 M&C cable (wire number LA1CW183) from M&C 1 port 4 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 11.

4. Disconnect RP 1 M&C cable (wire number LA1CW180) from M&C 1 port 30 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 8.

5. Disconnect RP 2 M&C cable (wire number LA1CW181) from M&C 1port 31 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 9.

6. Disconnect RP NAS M&C cable (wire number LA1CW184) from M&C 1 port 32 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 12.

7. Disconnect PX1 M&C cable (wire number LA1CW118) from M&C 1 port 28 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 1 port 3.

8. Disconnect PX2 M&C cable (wire number LA1CW119) from M&C 1 port 29 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 1 port 4.

Attachment H - Cable Relocation Procedure for WNOW

Move M&C cables from M&C 1 to M&C 2:

1. Disconnect Workstation 7 M&C cable (wire number LA1CW4-7) from M&C 1 port 26 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 20.

2. Disconnect Workstation 8 M&C cable (wire number LA1CW4-8) from M&C 1 port 27 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 21.

3. Disconnect Workstation 9 M&C cable (wire number LA1CW4-9) from M&C 1 port 28 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 22.

4. Disconnect Workstation A (10) M&C cable (wire number LA1CW4-10) from M&C 1 port 29 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 23.

5. Disconnect Workstation B (11) M&C cable (wire number LA1CW4-11) from M&C 1 port 3 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 24. Disconnect

6. Disconnect Workstation C (12) M&C cable (wire number LA1CW4-12) from M&C 1 port 4 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 25.

7. Disconnect Workstation D (13) M&C cable (wire number LA1CW4-13) from M&C 1 port 7 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 26. Disconnect

8. Disconnect AX M&C cable (wire number LA1CW123) from M&C 1 port 38 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 1 port 7.

Move WFO device M&C cables from RFC M&C to WFOC M&C:

NOTE:	A total of two cables will be moved from the RFC M&C to the WFO M&C. Both can be moved at one time or they can be moved one at a time as described in the following steps.

1. Disconnect PX1 M&C cable (wire number LA1CW118) from RFC M&C port 32 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the WFO AS1 rack and attach the cable to M&C 1 port 3.

2. Disconnect PX2 M&C cable (wire number LA1CW119) from RFC M&C port 35 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the WFO AS1 rack and attach the cable to M&C 1 port 4.

Attachment I - Cable Relocation Procedure for WNOR

Move M&C cables from M&C 1 to M&C 2:

1. Disconnect Workstation 7 M&C cable (wire number LA1CW4-7) from M&C 1 port 26 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 20.

2. Disconnect Workstation 8 M&C cable (wire number LA1CW4-8) from M&C 1 port 27 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 21.

3. Disconnect Workstation 9 M&C cable (wire number LA1CW4-9) from M&C 1 port 28 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 22.

4. Disconnect Workstation A (10) M&C cable (wire number LA1CW4-10) from M&C 1 port 29 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 23.

5. Disconnect Workstation B (11) M&C cable (wire number LA1CW4-11) from M&C 1 port 3 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 24.Disconnect

6. Disconnect Workstation C (12) M&C cable (wire number LA1CW4-12) from M&C 1 port 4 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 25.

7. Disconnect Workstation D (13) M&C cable (wire number LA1CW4-13) from M&C 1 port 15 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 2 port 26.

Move Firewall and PX M&C cables as directed in the following steps:

1. Disconnect PX1 M&C cable (wire number LA1CW118) from M&C 1 port 30 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 1 port 3.

2. Disconnect PX2 M&C cable (wire number LA1CW119) from M&C 1 port 31 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 1 port 4.

3. Disconnect FW1 (Firewall 1) M&C cable (wire number LA1CW98) from M&C 1 port 13 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 1 port 38.

4. Disconnect FW2 (Firewall 2) M&C cable (wire number LA1CW99) from M&C 1 port 14 and relabel with the same wire number label from the label set provided in the FMK. Attach the cable to M&C 1 port 29.

Attachment J - Cable Relocation Procedure for NMTR/NHDR/TBDR

Move RFC device M&C cables from WFOC M&C to RFC M&C:

NOTE:	A total of eight cables will be moved from the WFO M&C to the RFC M&C (three to M&C 1 and five to M&C 2). All eight can be moved at one time or they can be moved one at a time as described in the following steps.

1. Disconnect AX M&C cable (wire number LA1CW123) from WFO M&C port 32 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 1 port 7.

2. Disconnect PX1 M&C cable (wire number LA1CW118) from WFO M&C port 28 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 1 port 3.

3. Disconnect PX2 M&C cable (wire number LA1CW119) from WFO M&C port 29 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 1 port 4.

4. Disconnect GSW 1 M&C cable (wire number LA1CW182) from WFO M&C port 12 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 2 port 10.

5. Disconnect GSW 2 M&C cable (wire number LA1CW183) from WFO M&C port 13 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 2 port 11.

6. Disconnect RP 1 M&C cable (wire number LA1CW180) from WFO M&C port 14 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 2 port 8.

7. Disconnect RP 2 M&C cable (wire number LA1CW181) from WFO M&C port 15 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 2 port 9

8. Disconnect RP NAS M&C cable (wire number LA1CW184) from WFO M&C port 16 and relabel with the same wire number label from the label set provided in the FMK. Reroute the cable to the RFC AS1 rack and attach to RFC M&C 2 port 12.